NOAA Teacher at Sea
Miriam Hlawatsch
Onboard NOAA Ship NANCY FOSTER
July 29 – August 10, 2007

NOAA Teacher at Sea: Miriam Hlawatsch
NOAA ship NANCY FOSTER
Mission: Lionfish Survey
Day 4: Thursday, August 2, 2007
Location: 15 nm Southeast of Beaufort Inlet

Weather Data from the Bridge:
Visibility: 10 miles
Wind Direction: 060
Wind Speed: 11 knots
Sea Wave Height: 1-2 ft.
Swell Wave Height: 2 ft.
Seawater Temperature: 28.3ºC
Sea Level pressure: 1016.8 mb (millibars)
Cloud Cover: 3-5 oktas, cumulous, cumulonimbus

Personal Log:
Today I served as assistant *dive tender* for two dive rotations. That means I stay in the small boat with the coxswain (driver) and keep track of the divers by watching their bubbles. While the divers were working below I took the opportunity to converse with NOAA Junior Officer Trey Emmons and learned a great deal about the NOAA Officer Corps. Trey received a degree in Meteorology/Marine Science from NC State, Raleigh and will serve on the NANCY FOSTER for two years. During one outing I actually put on my snorkel gear and took some underwater shots of divers ascending to the surface.

NOAA Junior Officer Emmons with NOAA Ship NANCY FOSTER in the background.

Science Log:
Previously, I mentioned the multi-faceted nature of Paula Whitfield's current lionfish research. Having done my homework before joining the cruise I was familiar with her lionfish work since 2004. Paula explained how her research has evolved from finding,

counting and sampling lionfish for life history analysis to her current objectives that now include analysis of the native habitat community. With the aid of hydrographic surveys (mapping the sea floor) using multi-beam sonar technology, Paula hopes to expand the search area to determine lionfish distribution changes since 2000.

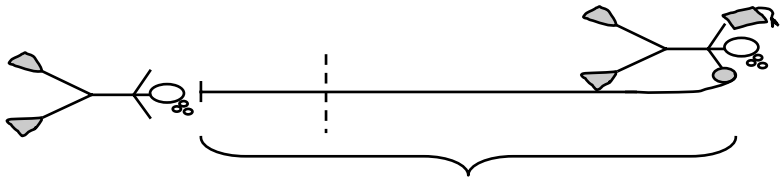
NOAA diver Brad Teer ascending to the surface.

Paula has an ambitious plan to accomplish her objectives and I will attempt to translate and provide an explanation for each. Feel free to email any questions to me at mhlawatsch@mac.com.

Objective #1: Conduct visual transect surveys to quantify lionfish and native fish populations, and characterize habitat at locations within Onslow Bay.

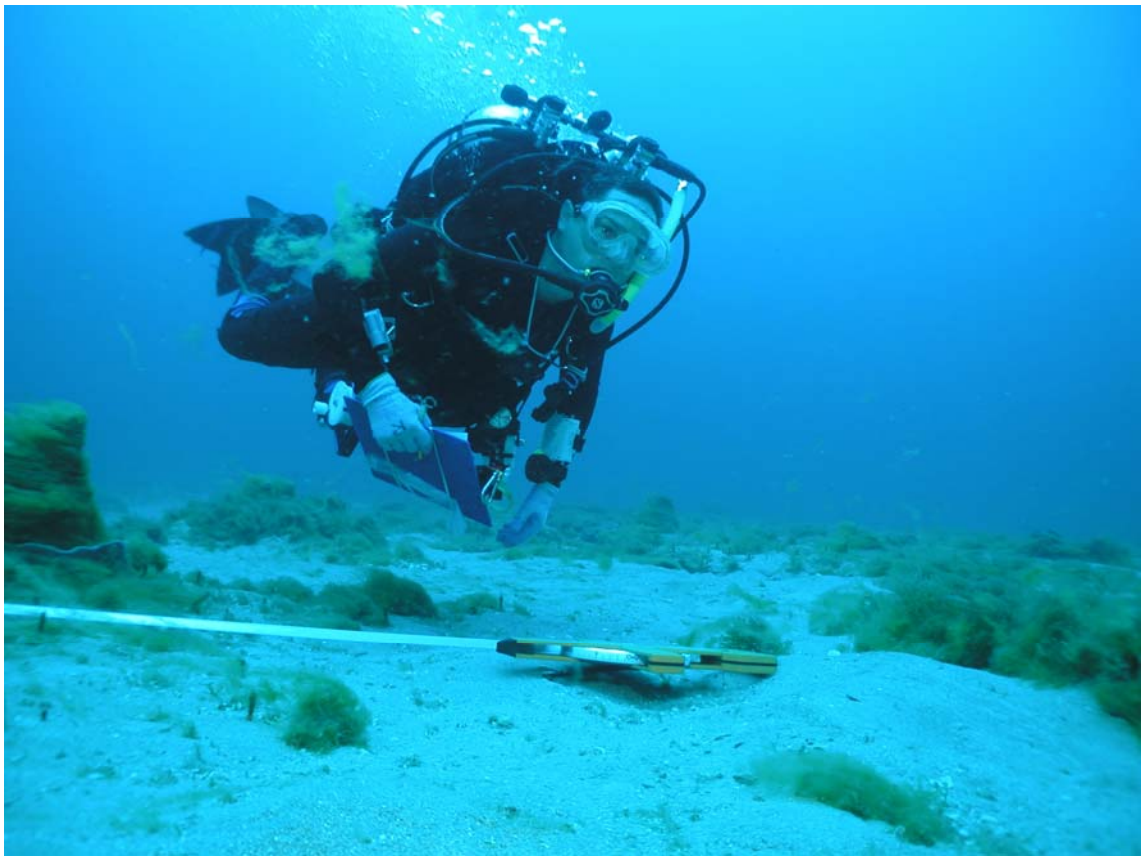
Paula's divers will count lionfish *and* native fishes. They will also examine and define lionfish habitats by setting up visual *transect surveys* at pre-selected locations within Onslow Bay.

A *transect survey* is set up by running a tape measure for 50 meters (*transect line*). The divers will observe and record what they see for five meters on either side of the transect line.



Width of transect is estimated to get the area

50 meters



NOAA Diver Roldan Muñoz working with a transect line. Photo courtesy of Doug Kesling

Note: I always thought the term *fish* was both singular and plural and found myself confused to hear the scientists use the term *fishes*. Scientist Thor Dunmire explained that using *fish* was appropriate when referring to many fish of one species. However, the use of *fishes* applies when referring to several different species of fish.

Objective #2: Conduct video transect surveys to quantify, smaller potential prey fish populations and characterize habitat.

Identify what lionfish may be eating by using visual observation and video cameras to record the smaller fish populations within the habitat. Video footage can be reviewed after the dive for more detailed information.